



## ABSTRACT OF THE DISCLOSURE

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3        This invention enables improved reception of ATSC terrestrial broadcast digital  
4        television signals. ATSC DTV is a standard of the Advanced Television Systems  
5        Committee (ATSC) for the terrestrial broadcast of digital television. ATSC DTV  
6        broadcast signals are subject to impairment due to multipath. Improved radio reception  
7        in multipath is possible when substantial reference components are transmitted as a  
8        component of the transmitted radio. However, the introduction of new signal  
9        components to the ATSC DTV broadcast signal represents a modification to the standard  
10      which weaken the benefits of standardization. This invention resolves this dilemma by  
11      carefully introducing data components into the data multiplex in a form compatible with  
12      the ATSC DTV standard. Data components are chosen so as to induce a substantial  
13      repeating reference component into the ATSC DTV modulation waveform. The induced  
14      reference waveform enables clear reception in multipath while the integrity of the  
15      standard is preserved.

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